

1. (Amended) A method for minimizing noise in an integrated circuit comprising:

choosing a net to be analyzed;

determining if the total path length of conductive paths coupled to a driver within  
5 said net exceed a maximum acceptable length for that given driver according to a minimum acceptable noise level for that given net, as determined by examination of a noise amplitude versus length of conduction path curve associated with the driver; and

inserting at least one buffer within said net at a position which is within the maximum acceptable length for conductive paths coupled to said driver, when the total  
10 path length of conductive paths coupled to the driver exceeds a maximum acceptable length for the driver according to a minimum acceptable noise level for that given net, as determined by examination of the noise amplitude versus length of conduction path curve associated with the driver.

15 2. (Amended) A computer readable media containing program instructions that, when executed, exercise code for minimizing noise in an integrated circuit, the computer readable media comprising:

program instructions for choosing a net to be analyzed;

program instructions for determining if the total path length of conductive paths  
20 coupled to a driver within said net exceed a maximum acceptable length for that given driver according to a minimum acceptable noise level for that given net, as determined by examination of a noise amplitude versus length of conduction path curve associated with the driver; and

program instructions for inserting at least one buffer within said net at a position  
25 which is within the maximum acceptable length for conductive paths coupled to said

driver, when the total path length of conductive paths coupled to the driver exceeds a maximum acceptable length for the driver according to a minimum acceptable noise level for that given net, as determined by examination of the noise amplitude versus length of conduction path curve associated with the driver.

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3. (Amended) A method for minimizing noise in an integrated circuit comprising:

choosing a net to be analyzed;

10 determining if the total path length of conductive paths coupled to a first driver within said net exceed a maximum acceptable length for said first driver according to a minimum acceptable noise level for said net, as determined by examination of a noise amplitude versus length of conduction path curve associated with the driver;

determining if a second driver exists which provides a stronger signal output than said first driver and which also is available to replace said first driver;

15 replacing said first driver with said second driver;

determining, once said first driver is replaced, if the total path length of conductive paths coupled to said second driver within said net exceed a maximum acceptable length for said second driver according to a minimum acceptable noise level for said net, as determined by examination of a noise amplitude versus length of 20 conduction path curve associated with the second driver; and

inserting at least one buffer within said net at a position which is within the maximum acceptable length for conductive paths coupled to said driver, when the total path length of conductive paths coupled to the driver exceeds a maximum acceptable length for the driver according to a minimum acceptable noise level for that given net, as

determined by examination of the noise amplitude versus length of conduction path curve associated with the driver.

4. (Amended) A computer readable media containing program instructions  
5 that, when executed, exercise code for minimizing noise in an integrated circuit, the  
computer readable media comprising:

program instructions for choosing a net to be analyzed;

program instructions for determining if the total path length of conductive paths  
coupled to a first driver within said net exceed a maximum acceptable length for said first  
10 driver according to a minimum acceptable noise level for said net, as determined by  
examination of a noise amplitude versus length of conduction path curve associated with  
the second driver;

program instructions for determining if a second driver exists which provides a  
stronger signal output than said first driver and which also is available to replace said first  
15 driver;

program instructions for replacing said first driver with said second driver;

program instructions for determining, once said first driver is replaced, if the total  
path length of conductive paths coupled to said second driver within said net exceed a  
maximum acceptable length for said second driver according to a minimum acceptable  
20 noise level for said net, as determined by examination of a noise amplitude versus length  
of conduction path curve associated with the second driver; and

program instructions for inserting at least one buffer within said net at a position  
which is within the maximum acceptable length for conductive paths coupled to said  
driver, when the total path length of conductive paths coupled to the driver exceeds a  
25 maximum acceptable length for the driver according to a minimum acceptable noise level

for that given net, as determined by examination of the noise amplitude versus length of conduction path curve associated with the driver.

5. The method for minimizing noise in an integrated circuit according to  
5 claim 1, wherein the curve defines a relationship between noise amplitude and conduction path length for the driver.

6. The method for minimizing noise in an integrated circuit according to  
claim 5, wherein the curve defines a maximum allowable noise amplitude for the net.

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7. (Amended) The method for minimizing noise in an integrated circuit according to claim 1, wherein the insertion of at least one buffer within the net occurs at a position within the maximum acceptable length for conductive paths coupled to the driver, as determined by examination of the curve associated with the driver.

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8. The method for minimizing noise in an integrated circuit according to  
claim 7, wherein the curve associated with the driver defines a relationship between noise amplitude and conduction path length for the driver.

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9. (Cancelled)

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11. (Cancelled)

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12. (Cancelled)

13. (Cancelled)

5 14. The method for minimizing noise in an integrated circuit according to  
claim 1, wherein the determination of the total path length of conductive paths coupled to  
a driver within said net includes a plurality of intersecting conduction paths.

10 15. The method for minimizing noise in an integrated circuit according to  
claim 14, wherein an insertion position of at least one buffer along the plurality of  
conduction paths is chosen to yield a most acceptable integrated circuit timing  
characteristic.

15 16. The method for minimizing noise in an integrated circuit according to  
claim 3, wherein the curve defines a relationship between noise amplitude and conduction  
path length for the driver.

17. The method for minimizing noise in an integrated circuit according to  
claim 16, wherein the curve defines a maximum allowable noise amplitude for the net.

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18. (Amended) The method for minimizing noise in an integrated circuit  
according to claim 3, wherein the insertion of at least one buffer within the net occurs at a  
position within the maximum acceptable length for conductive paths coupled to the  
driver, as determined by examination of the curve associated with the driver.

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19. The method for minimizing noise in an integrated circuit according to  
claim 18, wherein the curve associated with the driver defines a relationship between  
noise amplitude and conduction path length for the driver.

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22. (Cancelled)

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23. (Cancelled)

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25. The method for minimizing noise in an integrated circuit according to  
claim 3, wherein the determination of the total path length of conductive paths coupled to  
a driver within said net includes a plurality of intersecting conduction paths.

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26. The method for minimizing noise in an integrated circuit according to  
claim 25, wherein an insertion position of at least one buffer along the plurality of  
conduction paths is chosen to yield a most acceptable integrated circuit timing  
characteristic.

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27. The computer readable media containing program instructions that, when  
executed, exercise code for minimizing noise in an integrated circuit according to claim

2, wherein the curve defines a relationship between noise amplitude and conduction path length for the driver.

28. The computer readable media containing program instructions that, when  
5 executed, exercise code for minimizing noise in an integrated circuit according to claim  
27, wherein the curve defines a maximum allowable noise amplitude for the net.

29. (Amended) The computer readable media containing program instructions that, when executed, exercise code for minimizing noise in an integrated circuit according  
10 to claim 2, wherein the insertion of at least one buffer within the net occurs at a position within the maximum acceptable length for conductive paths coupled to the driver, as determined by examination of the curve associated with the driver.

30. The computer readable media containing program instructions that, when  
15 executed, exercise code for minimizing noise in an integrated circuit according to claim  
29, wherein the curve associated with the driver defines a relationship between noise amplitude and conduction path length for the driver.

31. (Cancelled)

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36. The computer readable media containing program instructions that, when  
5 executed, exercise code for minimizing noise in an integrated circuit according to claim  
2, wherein the determination of the total path length of conductive paths coupled to a  
driver within said net includes a plurality of intersecting conduction paths.

37. The computer readable media containing program instructions that, when  
10 executed, exercise code for minimizing noise in an integrated circuit according to claim  
36, wherein an insertion position of at least one buffer along the plurality of conduction  
paths is chosen to yield a most acceptable integrated circuit timing characteristic.

38. The computer readable media containing program instructions that, when  
15 executed, exercise code for minimizing noise in an integrated circuit according to claim  
4, wherein the curve defines a relationship between noise amplitude and conduction path  
length for the driver.

39. The computer readable media containing program instructions that, when  
20 executed, exercise code for minimizing noise in an integrated circuit according to claim  
38, wherein the curve defines a maximum allowable noise amplitude for the net.

40. (Amended) The computer readable media containing program instructions  
that, when executed, exercise code for minimizing noise in an integrated circuit according  
25 to claim 4, wherein the insertion of at least one buffer within the net occurs at a position

within the maximum acceptable length for conductive paths coupled to the driver, as determined by examination of the curve associated with the driver.

41. The computer readable media containing program instructions that, when  
5 executed, exercise code for minimizing noise in an integrated circuit according to claim  
40, wherein the curve associated with the driver defines a relationship between noise  
amplitude and conduction path length for the driver.

42. (Cancelled)

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47. The computer readable media containing program instructions that, when  
20 executed, exercise code for minimizing noise in an integrated circuit according to claim  
4, wherein the determination of the total path length of conductive paths coupled to a  
driver within said net includes a plurality of intersecting conduction paths.

48. The computer readable media containing program instructions that, when  
25 executed, exercise code for minimizing noise in an integrated circuit according to claim